UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/470,967	12/23/1999	Kunihito Seta	018976-154	6834

21839 7590 11/05/2003

BURNS DOANE SWECKER & MATHIS L L P
POST OFFICE BOX 1404
ALEXANDRIA, VA 22313-1404

EXAMINER	
HECKENBERG JR, DONALD H	

ART UNIT	PAPER NUMBER
1722	

DATE MAILED: 11/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/470,967	SETA ET AL.	
	Examiner	Art Unit	
	Donald Heckenberg	1722	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 August 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4-7,35 and 54-73* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1,2,4-7,35 and 54-59* is/are allowed.

6)☒ Claim(s) *60-66 and 70* is/are rejected.

7)☒ Claim(s) *67-69 and 71-73* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) -- .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 60-61 are rejected under 35 U.S.C. 102(b) as being anticipated by Baigent (U.S. Pat. No. 3,080,610; previously of record).

Baigent discloses an injection molding machine. The molding machine comprises a plasticating unit (3) for plasticating a thermoplastic resin. An injection unit (10) connected to the plasticating unit through a connecting passage to inject the plasticated resin into the mold. A buffering chamber (13) is provided for receiving the resin plasticated in the plasticating unit, the buffering unit located in a longitudinal direction of the plasticating unit (see figures 1-3).

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at

the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. The factual inquiries set forth in Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 62-63, 65, and 70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baigent in view of Yabushita (U.S. Pat. No. 5,389,315; previously of record).

Baigent discloses the apparatus as described above. Baigent also discloses a reciprocating screw (5) in the plasticating unit moved by means of a fluid pressure cylinder (60) and corresponding piston rod (see figure 3).

Baigent does not disclose a position detecting sensor for detecting the position of the piston rod attached to the plasticating screw to control the amount of resin input into the buffering chamber.

Yabushita discloses an injection molding apparatus. The apparatus is provided with a plasticating unit (30) and a screw (33). A position detecting sensor (34) is used to monitor the movement of a piston rod attached to the screw (see figure 1) for the purpose of controlling the amount of resin that is released out of the plasticating unit (see cl. 4, ll. 52-58).

It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to have modified the apparatus of Baigent as such to have provided the plasticating screw with a position detecting sensor because this would allow for control of the amount of resin released from the plasticating unit as suggested by Yabushita. Accordingly, the

senor in controlling the amount of resin released from the plasticating unit would thereby control the amount of resin released from the plasticating unit into the buffering unit.

7. Claims 64 and 66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baigent modified by Yabushita as applied to claims 62-63, 65, and 70 above, and further in view of Cheng (U.S. Pat. No. 5,098,267; previously of record).

Baigent and Yabushita disclose and suggest the apparatus as described above. Baigent and Yabushita do not disclose the energizing means for the plunger to comprise a spring or an electric actuator as alternatives to the fluid pressure cylinder.

Cheng teaches an injection molding apparatus comprising an injecting plunger and plasticating screw (12), wherein the plunger is energized by a spring (18) or a mechanical device as an alternative to the fluid pressure cylinder (cl. 3, ll. 62-65).

It would have been obvious to one of ordinary skill in the art at the time of the Applicant's invention to have modified the apparatus of Baigent and Yabushita as such to have used a spring or a mechanical device such as an electric actuator as the energizing means for the injection plunger instead of a

fluid pressure cylinder because these are suitable alternatives recognized in the art to provide the energizing force for the injection plunger as suggested by Cheng.

8. Applicants' arguments filed August 12, 2003 have been fully considered but they are not persuasive.

Initially, the apparent misnumbering by Baigent noted in footnote 1 of the previous Office Action, and discussed by Applicant in the response to the Office Action needs to be resolved.

Baigent discloses "an intermediate extension conduit 13 is surrounded throughout its length by suitable heating elements 14" (cl. 2, ll. 56-58). Baigent further uses the reference numeral 14 to denote a "injection plunger or ram" (cl. 3, ln. 1), thereby creating some confusion in the numbering. Figure 1 shows two reference number 14s, and no number 13. One of the 14s is located between nozzle 3a and an orifice 12. Based on Baigent's disclosure at column 2, lines 54-58, this reference numeral 14 between 3a and 12 is clearly meant to indicate either the heating elements or the conduit. Whether Baigent meant this to be indicating the heating element or the conduit is not really important, because as the disclosure indicates, the heating elements and conduit are located adjacent to one

another, and thus it is readily apparent the structure(s) partially marked with the 14 between 3a and 12 comprises a heating element and a conduit.

More importantly however, Baigent clearly shows the conduit 13 in Figure 3. In Figure 3, the conduit 13 is shown inside plasticating chamber 3, in front of screw 5.

Applicants argue that nothing in Baigent teaches or suggest a buffering unit contained in a plasticating unit as recited in claim 60 of the instant application. Applicants assert that Baigent merely discloses a conduit connected between the nozzle of the plasticating unit and the inlet orifice 12 of the transfer chamber.

This argument does not consider Figure 3 of Baigent which shows an embodiment of the invention wherein the structure 13 is not located between a nozzle and inlet orifice, but rather merely an extension of the chamber in which the plasticating screw (5) is located. This chamber receives the resin plasticated by the screw prior to the resin being passed through a conduit into the injection unit. Thus, although Baigent does not use the terminology "buffering chamber" for structure 13, the structure is acting as such to contain the resin for some period of time after it has be plasticized by the screw and before it is injected into the mold. In effect, the structure is

acting in the same manner as a "buffering chamber" as the term is defined in the disclosure of the instant application- see for example, the instant specification, p. 4, ll. 5-14.

Baigent's figure 1 shows a different embodiment of the invention. Although the conduit structure is between nozzle 3a and the inlet orifice 12, the conduit is still functioning to receive the resin from the plasticating unit 3 for a period of time before the resin is sent to the injection unit, and thus the conduit is a buffering chamber.

Applicants further argue that everything in Figure 1 of Baigent is a plasticating unit with the exception of "preplasticating chamber" 3. Accordingly, Applicants assert that buffering unit of Baigent is located in a direction perpendicular to the plasticating unit, and nothing teaches or suggests a buffering unit located in a longitudinal direction of the plasticating unit as recited in claim 60.

As noted above, the structure 13 is a buffering unit. Figures 1 and 3 both show embodiments of Baigent apparatus with the buffering unit located in a longitudinal direction of the plasticating unit (3).

Applicants' argument that everything shown in Figure 1 (and thus presumptively Figure 3) is a plasticating unit with the exception of the structure "preplasticating unit 3" is not a

correct description of Baigent's apparatus. The "preplasticating unit" described by Baigent is the same as what is termed a "plasticating unit" in the instant application. Baigent used the prefix "pre" before "plasticating unit" simply to denote that the resin is plasticated before it is moved to other parts of the apparatus, such as the injection unit and mold, thus function as the "plasticating unit" in the instant application. Note further, nowhere does Baigent disclose a "plasticating unit" in addition to the "preplasticating unit." Instead, Baigent discloses that other parts of the apparatus are for "keeping the thermoplastic material at the desired degree of plasticity" (cl. 2, ll. 44-46).

9. Claims 1-2, 4-7, 35, and 54-59 are allowed. See the reasons for indicating allowable subject matter in the previous Office Action.

10. Claims 67-69 and 71-73 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. See the reasons for indicating allowable subject matter in the previous Office Action.

11. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donald Heckenberg whose telephone number is (703) 308-6371. The examiner can normally be reached on Monday through Friday from 9:30 A.M. to 6:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker, can be reached at (703) 308-0457. The official fax phone number for the organization where this application or proceeding is

assigned is (703) 972-9306. The unofficial fax phone number is (703) 305-3602.

Donald Heckenberg
October 28, 2003

JAMES P. MACKEY
PRIMARY EXAMINER
10/29/03